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United States Patent

[19]

Landry[11] **Patent Number:** **5,736,343**[45] **Date of Patent:** **Apr. 7, 1998****[54] DETECTION OF ORGANIC COMPOUNDS
THROUGH REGULATION OF ANTIBODY-
CATALYZED REACTIONS****[76] Inventor:** **Donald Landry**, 29 Chremont Apt. 2
South, New York, N.Y. 10027**[21] Appl. No.:** **698,812****[22] Filed:** **Aug. 16, 1996****Related U.S. Application Data****[60] Provisional application No.** 60/002,466, Aug. 16, 1995.**[51] Int. Cl. 6** **C12Q 1/25****[52] U.S. Cl.** **475/7.6; 435/188.5****[58] Field of Search** **435/7.6, 188.5****[56] References Cited****U.S. PATENT DOCUMENTS**

3,551,555	12/1970	Hermanus et al.	424/12
3,720,760	3/1973	Hennich et al.	424/1
3,811,840	5/1974	Bauer et al.	23/253
3,867,517	2/1975	Ling	424/1
3,893,808	7/1975	Campbell	23/253
3,901,657	8/1975	Lightfoot	23/253
3,926,564	12/1975	Giaever	23/254
3,932,220	1/1976	Liotta	195/103.5
3,933,997	1/1976	Hersh et al.	424/1
3,935,074	1/1976	Rubenstein et al.	195/103.5
3,949,064	4/1976	Bornstein et al.	424/1
3,960,499	6/1976	White	25/257
3,961,894	6/1976	Gordon et al.	23/230.6
3,975,162	8/1976	Renn	23/253
3,979,509	9/1976	Giaever	424/12
3,981,981	9/1976	Reunanen	424/1.5
3,989,591	11/1976	Liotta	195/1.8
4,012,198	3/1977	Finter et al.	23/253
4,016,043	4/1977	Schuurs et al.	195/103.5
4,017,597	4/1977	Reynolds	424/1.5
4,020,151	4/1977	Bolz et al.	424/1.5
4,038,485	7/1977	Johnston et al.	23/270
4,144,306	3/1979	Figueras	422/56
4,175,923	11/1979	Friend	23/270

4,205,952	6/1980	Cais	23/230
4,235,601	11/1980	Deutsch et al.	23/230
4,659,567	4/1987	Tramontano et al.	424/85
4,792,446	12/1988	Kim et al.	424/85
4,888,281	12/1989	Schochetman et al.	435/72
4,963,355	10/1990	Kim et al.	424/85.8
5,030,717	7/1991	Tramontano et al.	530/387
5,037,750	8/1991	Schochetman et al.	435/183
5,187,086	2/1993	Janda	435/140

FOREIGN PATENT DOCUMENTS

WO 89/05977 6/1989 WIPO .

Primary Examiner—Charles L. Patterson, Jr.**[57] ABSTRACT**

The present invention provides a method for determining the presence of a target organic molecule in a sample which comprises either (A): first, adding a substrate molecule to the sample, the substrate molecule being a conjugate of the target organic molecule and a reporter molecule; second, adding a catalytic monoclonal antibody to the sample which (1) recognizes and binds the target organic molecule when the target organic molecule is present in the sample and (2) recognizes and binds the substrate molecule when the target organic molecule is not present in the sample; and third detecting a change in the sample signifying the absence of the target organic molecule, the change being the product of an antibody-catalyzed reaction and thereby determining the presence of an organic molecule in the sample; or (B): first adding a substrate molecule to the sample, the substrate molecule being a conjugate of a molecule complementary to the target molecule and a reporter molecule; second adding a catalytic monoclonal antibody to the sample which (1) recognizes and binds the target organic molecule when the target molecule is present in the sample and (2) recognizes and binds the substrate molecule only if the target molecule is present in the sample; and third detecting a change in the sample signifying the presence of the target molecule, the change being the product of an antibody-catalyzed reaction and thereby determining the presence of the target organic molecule in the sample.

25 Claims, 8 Drawing Sheets